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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/758,144	01/12/2001	Koji Ito	108072	8913
25944	7590	09/17/2004	EXAMINER	
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			PHAM, HAI CHI	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 09/17/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/758,144

Applicant(s)

ITO ET AL.

Examiner

Hai C Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 10-14 is/are rejected.
- 7) ☒ Claim(s) 9 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 5 and 7-8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

#### **Claim 5:**

- Claims 2 and 3 combined indicates that the claimed elements are positioned in succession in the following order along the optical path between the first deflector and the scan start time determination unit: first deflector - first converging unit - third converging unit. However, claim 5 recites the following limitation "the third converging unit converges the laser beam emitted by the laser diode onto the

first deflector” that would place the third converging unit upstream of the first deflector and create an incompatibility. Moreover, such disposition of the elements as recited in claim 5 is not supported by the specification.

Claim 7:

- The following limitation “the predetermined length” lacks antecedent basis.

However, it appears that claim 7 should claim dependency from claim 6 instead of from claim 5.

Claim 8 is dependent from claim 7 above, and is therefore indefinite.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-2, 11, 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Houki (U.S. 4,847,492).

Houki discloses an optical beam scanner comprising a laser diode (2) that emits a laser beam, a first converging unit (f- $\theta$  lens 6) that converges the laser beam in a main scanning direction, a second converging unit (cylinder mirror/lens 11) that converges the laser beam that has been converged by the first converging unit in the sub-scanning direction (the cylinder mirror 11 can be either a cylinder lens or a second component of

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the f- $\theta$  lens assembly along with the [first] f- $\theta$  lens 6) (col. 4, lines 59-68), a scan start time determination unit (sensor 8) that detects within a predetermined area, the laser beam that has been converged by the first converging unit before being converged by the second converging unit and determines a scan start time upon the detection of the laser beam, a photosensitive medium (photoconductor drum 7) on which a scanning line is formed along the main scanning direction, and a scan controller (diode drive circuit 1) that controls a start of scanning the photosensitive medium with the laser beam that has been converged by the first and second converging units (Fig. 11).

Houki further teaches a first deflector (polygon mirror 5) that deflects the laser beam emitted by the laser diode to the first converging unit.

The method claim 13 is deemed to be clearly anticipated by functions of the above structures.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-4, 6, 10, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Houki in view of Kaneko (U.S. 4,720,632).

Houki discloses all the basic limitations of the claimed invention except for the third converging unit.

Kaneko discloses a synchronizing light beam detector used in a laser beam scanning device, which includes a cylindrical lens (34) for converging the laser beam converged by the scanning lens onto the light receiving surface of the beam detector (32), and another cylindrical lens (12) for converging the laser beam emitted by the laser diode (10) onto the deflecting surface of the polygon mirror (16), both lenses (34 and 12) being formed of a same component.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to incorporate the focusing lens focusing the laser beam onto the light-receiving surface of the beam position sensor of Houki as taught by Kaneko. The motivation for doing so would have been to obtain a desired beam size such that a sufficient amount of light is coupled to the sensor as suggested by Kaneko.

Houki also teaches a forth converging unit (cylinder lens 10) that converges the laser beam emitted by the laser diode onto the first deflector (polygon mirror 5), a slit (slit plate 13, Fig. 4) having a predetermined length along the sub-scanning direction in front of the sensor (8), and a second deflector (mirror 9) that deflects the laser beam that has been converged by the first converging unit (f- $\theta$  lens 6).

### ***Allowable Subject Matter***

9. Claim 9 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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10. Claims 7 and 8 would be allowable if rewritten to overcome the rejections under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter: the primary reason for the indication of the allowability of claim 7 is the inclusion therein, in combination as currently claimed, of the limitation "wherein the third converging unit converges the laser beam in the sub-scanning direction onto the scan start time determination unit with a deviation from an optical axis of the laser beam, the deviation being smaller than or equal to a half of the predetermined length", which is not found taught the prior art of record considered alone or in combination.

The primary reason for the indication of the allowability of claim 9 is the inclusion therein, in combination as currently claimed, of the limitation "wherein a first traveling distance of the laser beam along an optical axis between the first deflector and the scan start time determination unit is greater than or equal to four times a focal length of the third converging unit", which is not found taught the prior art of record considered alone or in combination.

Claim 8 is allowable because it is dependent from claim 7 above.

### ***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hai C Pham whose telephone number is (571) 272-2260. The examiner can normally be reached on M-F 8:30AM - 5:30PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen D Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



HAI PHAM  
PRIMARY EXAMINER  
August 30, 2004